Water-Data Report 2012

06200000 BOULDER RIVER AT BIG TIMBER, MT

Upper Yellowstone Basin

LOCATION.--Lat 45°50'02", long 109°56'19" referenced to North American Datum of 1983, in SE ¼ NE ¼ SE ¼ sec.14, T.1 N., R.14 E., Sweet Grass County, MT, Hydrologic Unit 10070002, on left bank 150 ft upstream from Old Boulder Bridge, 1 mi east of Big Timber, and at river mile 1.6.

DRAINAGE AREA.--523 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 1947 to December 1953, March 1955 to current year. Monthly discharge only for April 1947, published in Water Supply Paper 1309.

GAGE.--Water-stage recorder. Elevation of gage is 4,056.39 ft, referenced to the National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records are good except for estimated daily discharges which are poor. Diversions for irrigation of about 13,300 acres, of which about 250 acres is downstream from station. U.S. Geological Survey satellite telemeter is located at the station. Several unpublished observations of water temperature and specific conductance were made during the year.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	156	225	198	e140	139	e110	188	718	1,210	1,960	277	73
2	154	218	179	e170	149	e110	205	668	1,880	1,880	255	73
3	152	202	e160	184	135	e110	192	610	2,820	1,790	243	73
4	149	221	e150	169	e110	125	186	567	3,560	1,770	244	71
5	153	229	e120	167	e100	124	196	556	4,740	1,520	228	70
6	173	226	e130	165	e90	127	233	539	4,920	1,280	212	70
7	210	205	e180	e140	e110	e100	213	507	2,870	1,110	199	70
8	213	202	e200	e110	e120	e100	198	473	2,400	1,110	182	69
9	222	206	203	e160	e140	e110	194	468	3,410	1,030	174	67
10	216	213	197	166	e120	123	196	603	2,780	931	169	63
11	215	224	196	e120	e100	124	203	637	2,030	879	181	62
12	224	223	e180	e80	e90	129	253	571	1,830	845	183	60
13	234	223	e170	e130	e140	126	308	565	1,890	787	170	58
14	243	220	192	172	137	126	288	658	2,210	767	156	57
15	229	220	192	e150	e110	127	274	920	2,200	792	137	55
16	240	203	187	e110	e90	132	272	1,380	2,060	772	130	53
17	287	209	188	e90	e130	147	259	1,640	2,450	760	126	55
18	268	e220	188	e80	119	160	265	1,960	2,890	650	121	54
19	252	e200	185	e70	e120	185	266	1,610	2,580	576	118	52
20	246	e160	176	e80	109	156	252	1,260	2,100	530	116	51
21	240	e210	188	e100	123	138	250	1,270	1,950	502	106	48
22	237	e220	e130	e130	137	143	304	2,030	2,240	486	105	46
23	237	227	e140	e140	132	145	387	2,490	2,650	472	102	46
24	240	216	e170	e140	122	154	545	1,750	3,140	441	96	45
25	248	213	e180	e150	124	158	846	1,420	3,270	402	89	46
26	234	e180	175	165	e110	170	1,050	1,240	3,340	367	87	46
27	215	205	161	e140	e100	188	1,310	1,080	2,980	344	85	48
28	219	206	177	e110	e110	184	1,150	922	2,230	391	83	48
29	213	206	181	e160	e100	181	889	822	2,100	348	79	52
30	214	202	179	164	---	174	753	871	2,040	320	77	54
31	213	---	189	149	---	172	---	874	---	293	75	---
Total	6,746	6,334	5,441	4,201	3,416	4,358	12,125	31,679	78,770	26,105	4,605	1,735
Mean	218	211	176	136	118	141	404	1,022	2,626	842	149	57.8
Max	287	229	203	184	149	188	1,310	2,490	4,920	1,960	277	73
Min	149	160	120	70	90	100	186	468	1,210	293	75	45
Ac-ft	13,380	12,560	10,790	8,330	6,780	8,640	24,050	62,840	156,200	51,780	9,130	3,440

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2012, BY WATER YEAR (WY)*

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	214	189	152	134	125	127	213	1,125	2,719	1,257	235	180
Max	417	282	214	214	197	179	426	2,241	4,638	4,307	709	534
(WY)	(1973)	(1998)	(1976)	(1984)	(1985)	(1979)	(2009)	(1976)	(1997)	(1975)	(1968)	(1968)
Min	74.9	108	71.8	54.7	55.2	92.9	66.7	429	894	193	21.9	27.7
(WY)	(2002)	(1988)	(1988)	(2001)	(2001)	(2002)	(1961)	(1953)	(1987)	(1988)	(1961)	(1988)

*During periods of operation (April 1947 to December 1953, March 1955 to current year).

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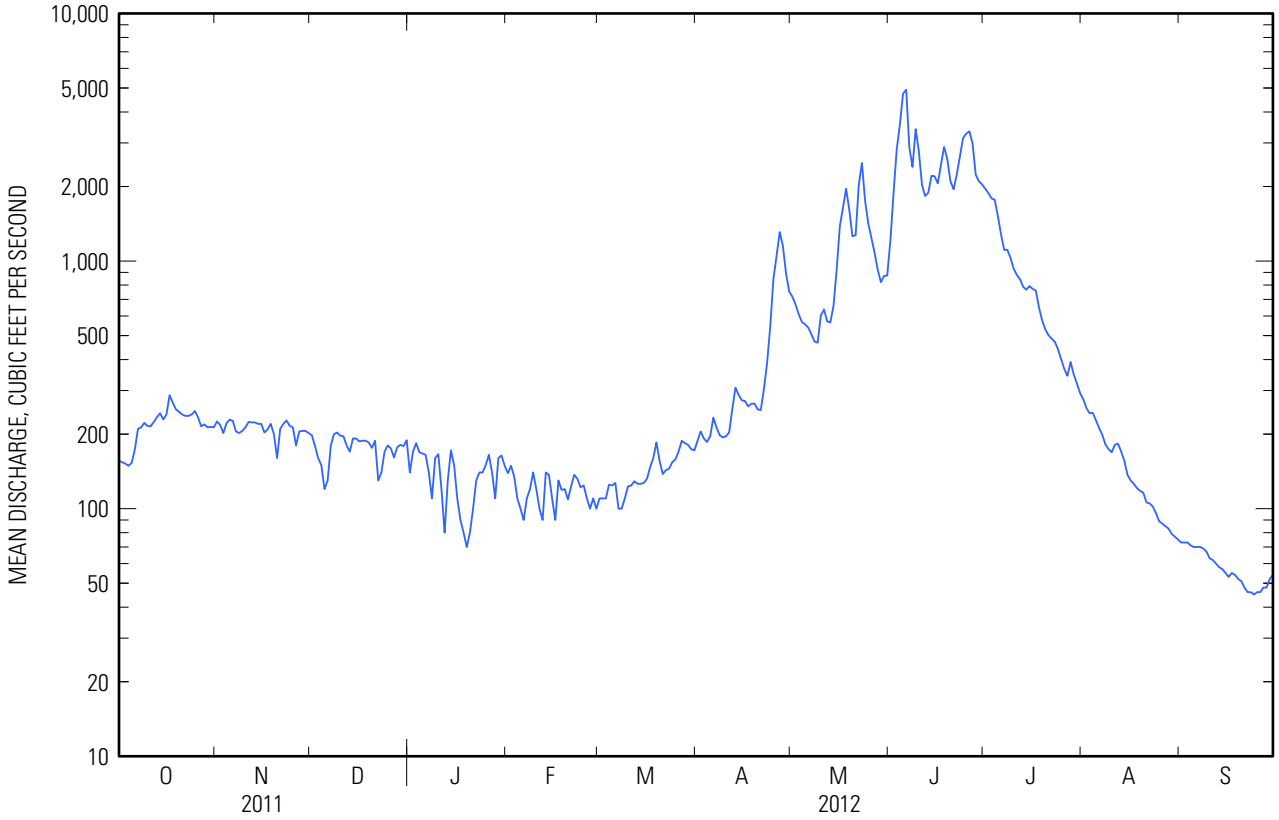
SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1948 – 2012*	
Annual total	330,662		185,515			
Annual mean	906		507		558	
Highest annual mean					905	1975
Lowest annual mean					310	2001
Highest daily mean	8,650	Jun 30	4,920	Jun 6	8,650	Jun 30, 2011
Lowest daily mean	60	Feb 2	45	Sep 24	12	Aug 26, 1961
Annual seven-day minimum	107	Jan 28	46	Sep 21	13	Aug 25, 1961
Maximum peak flow			5,760	Jun 6	[b]9,940	Jun 5, 1997
Maximum peak stage			7.03	Jun 6	9.00	Jun 5, 1997
Instantaneous low flow			[a]45	Sep 21	10	Aug 26, 1961
Annual runoff (ac-ft)	655,900		368,000		404,400	
10 percent exceeds	3,100		1,760		1,720	
50 percent exceeds	213		195		179	
90 percent exceeds	132		80		100	

*During periods of operation (April 1947 to December 1953, March 1955 to current year).
[a]Gage height, 1.34 ft.
[b]From rating curve extended above 6,000 ft³/s.